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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,354	09/27/2001	Rumo Satake	07977/285001/US5238	3893

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EXAMINER	
LEFLORE, LAUREL E	
ART UNIT	**PAPER NUMBER**
2673	11

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/966,354	SATAKE, RUMO	
	Examiner	Art Unit	
	Laurel E LeFlore	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1,3,4,6-10,15,16,18-23,25-27 and 29* is/are allowed.

6)☒ Claim(s) *2,5,11-14,17,24 and 28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 September 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 5 March 2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2, 5, 11-14 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. The recitation of claim 2, "simultaneously applying a potential...to...a plurality of pixels connected to a signal line, an displaying a same gray-scale" is not clear. Displaying the same gray-scale as what? The claim could be interpreted, for instance, as simultaneously applying a potential and displaying a same gray-scale. In this case, what is the gray-scale the same as? The claim could also be interpreted as the plurality of pixels connected to a signal line, the plurality of pixels displaying a same grey-scale. In this case, are the pixels displaying the same grey-scale as each other or as some previous time period or as some previous scan line, etc?

5. The recitation of claim 11, "a first means for detecting pixel TFTs connected to a same signal line and **displaying a same gray scale**" is not clear. Displaying the same gray scale as what? For instance, the claim could be interpreted as the first means detecting pixels and the first means displaying a same gray-scale. In this case, what is the gray-scale the same as? It could be the same gray-scale as a previous time period or a previous scan line, etc. The claim could also be interpreted as the first means detecting pixels and the pixels all having the same gray-scale as each other. It is not clear what is displayed the same gray scale.

6. Claims 12-14 are rejected because they depend on rejected claim 11 and claims 5 and 24 are rejected because they depend on claim 2.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 2, 5 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakajima et al. 6,486,864 B1.

9. In regard to claim 2, Nakajima discloses a method of driving a liquid crystal display device comprising a step of simultaneously applying a potential of signal voltage to a plurality of pixel electrodes of a plurality of pixels connected to a signal line

displaying a same grey-scale. See column 13, lines 55-62, in reference to figure 5, disclosing, "A voltage corresponding to an image signal for the row...is applied as a source voltage Vs to the source electrode 22 during the assist signal writing scanning period and the image signal writing scanning period. A plurality of such image signals are applied sequentially. A common voltage Vc is applied to the common electrode 25." Further see column 15, lines 45-49, disclosing, "The settings of the source voltage Vs and the common voltage Vc...may be appropriately set for each of the gray-scale levels to be provided for the image signal." Also see column 13, line 18, disclosing that such processes are to be applied to a liquid crystal display. Note in figure 5 that the signal line is source electrode 22.

10. In regard to claim 5, Nakajima discloses a method of driving a liquid crystal display device wherein a first light emission color, a second light emission color, and a third light emission color are intermittently incident upon the liquid crystal display device. See column 13, lines 17-19, disclosing that the invention is "applied to a liquid crystal display device based on the field sequential color method". Also see column 2, lines 33-36, disclosing that in the field sequential color method, "the output color of the light source is switched among red, blue and green while an image corresponding to each output color is synchronously displayed."

11. In regard to claim 24, Nakajima discloses that the liquid crystal display device is driven in a field sequential system. See rejection of claim 5.

Claim Rejections - 35 USC § 103

12. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. 5,774,100 in view of Ozawa 2001/0017610 A1.

13. In regard to claim 11, Aoki discloses LCD device comprising: a first means for detecting pixels connected to a same signal line (see fig. 8B; column 6, lines 46-48, 62-column 7, line 4; column 9, lines 3-24). Aoki does not expressly detail displaying the same gray-scale, a second means and selecting a signal line and scanning line connected to the TFT. However, the patent of Ozawa is cited to teach that it is well known for LCD device to display the same gray-scale (see page 2, paragraphs [0020] and [0022]; pages 2-3, paragraph [0023]; as best understood); a second means for simultaneously applying a potential of a signal voltage to pixel electrodes of the pixels (pages 1-2, paragraph [0014]; page 2, paragraph [0020]).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have been motivated to incorporate the method of displaying the same gray-scale and simultaneously apply a potential of a signal voltage to pixel electrodes as taught by Ozawa into the device of Aoki et al. because this will allow reduction of power consumption of Aoki's display device.

14. In regard to claim 12, Ozawa clearly teaches the second means for selecting the signal line and the scanning line of the pixel TFT (see page 2, paragraphs [0020], [0021]; page 3, paragraph [0024]).

15. Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. in view of Ozawa as applied to claims 11 and 12 above, and further in view of Koyama et al. 6,177,920 B1.

In regard to claims 13 and 14, Aoki as modified with Ozawa teach means for selecting a signal line and scanning line but has failed to teach that the means for selecting the scanning and the signal line has an address decoder. Koyama et al. clearly states that it is conventional to have an address decoder to select a signal line and a scanning line (see fig. 3, element 301; figure 13, element 1303; also see column 3, lines 19-22, 28-32; column 5, lines 35-37; column 7, lines 52-57; column 9, lines 44-52).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the address decoder of Koyama et al. in the display driving system of Aoki et al., since this will provide an excellent display which can be obtained with an improved yield (column 5, lines 42-43).

16. Claims 17 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. in view of Ozawa as applied to claims 11 and 12 above, and further in view of Nakajima et al. 6,486,864 B1.

In regard to claims 17 and 28, Aoki et al. in view of Ozawa discloses an invention similar to that which is claimed in claims 17 and 28. See rejections of claims 11-14 for similarities. Aoki et al. in view of Ozawa does not disclose that the liquid crystal display is driven in a field sequential system wherein light sources are composed of a first, second and third light emission color.

Nakajima discloses a method of driving a liquid crystal display device wherein a first light emission color, a second light emission color, and a third light emission color are intermittently incident upon the liquid crystal display device. See column 13, lines

17-19, disclosing that the invention is "applied to a liquid crystal display device based on the field sequential color method". Also see column 2, lines 33-36, disclosing that in the field sequential color method, "the output color of the light source is switched among red, blue and green while an image corresponding to each output color is synchronously displayed."

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the liquid crystal display of Aoki et al. in view of Ozawa by driving it in a field sequential system wherein light sources are composed of a first, second and third light emission color, as in the teaching of Nakajima et al. One would have been motivated to make such a change based on the teaching of Nakajima et al. that such a driving method "produces a color display by using a black and white liquid crystal panel" (see column 2, lines 30-31). Also, such a driving method has been used before and is a conventional way of driving a liquid crystal display.

Allowable Subject Matter

17. Claims 1, 3, 4, 6-10, 15, 16, 18-23, 25-27 and 29 are allowed.

18. The following is a statement of reasons for the indication of allowable subject matter: The cited prior art has failed to teach applicant's claimed invention, in which, "a response time of liquid crystal when a voltage value is changed from the first signal voltage to the second signal voltage is calculated, and in an order from a pixel in which the calculated response time of liquid crystal is long, the potential of the second signal voltage is applied to the pixel electrode of the pixel in the second sub-frame period"; "applying a potential of a first signal voltage to the first and second pixel electrode and

applying a potential of a second signal voltage to the second pixel electrode, wherein a difference between an absolute value of the first signal voltage and the second signal voltage is larger than 0 volt and smaller than 0.5 volt"; and deciding an order of applying the second signal voltages to the plurality of pixel electrodes in accordance with a voltage difference between the first and second signal voltages of the corresponding pixel electrodes."

Response to Arguments

19. Applicant has amended the specification to overcome the objection to the specification of Paper No. 7. Objection to the specification is withdrawn.

20. Applicant's arguments filed 5 May 2004 have been fully considered but they are not persuasive.

21. On pages 10-11 of Paper No. 10, applicant argues that "Nakajima does not disclose or properly suggest a method in which a potential of a signal voltage is supplied to a plurality of pixel electrodes of a plurality of pixels connected to a signal line, and simultaneously, a same grey-scale is displayed." Applicant emphasizes on page 10 the limitation, "connected to a signal line". However, as indicated in the above office action, Nakajima column 13, lines 55-62, in reference to figure 5, discloses, "A voltage corresponding to an image signal for the row...is applied as a source voltage Vs to the source electrode 22". Note in figure 5 that the signal line is source electrode 22.

22. On pages 11-12 of Paper No. 10, applicant argues that "even if Ozawa is said to disclose or suggest 'simultaneously applying a potential of a signal voltage to pixel electrodes,' such pixel electrodes are not in pixels connected to a same signal line".

However, as shown in figure 1 and in lines 6-10 of paragraph [0020] of Ozawa (which is also referenced on page 11 of Paper No. 10), "The reference signals (LS) are supplied to the signal supply lines 113 when corresponding scanning lines (112) are selected; therefore, when the first and second transistor elements (116,117) simultaneously turn ON, the reference signals (LS) are applied to the pixel electrodes (118)." The pixel electrodes are in pixels connected to a same signal line, signal line 113. Note that scanning line 112 runs parallel to signal line 113.

Conclusion

23. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laurel E LeFlore whose telephone number is (703) 305-8627. The examiner can normally be reached on Monday-Friday 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (703) 305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LEL
29 June 2004

Amare Mengistu
Primary Examiner